DISCUSSION OF THE AMENDMENT

Claims 1 and 2 have been amended to clarify that the term "substantially isolated from oxygen" refers to the heating furnace. Claims 1 and 2 have been further amended by replacing "the biomass carbide" with --a carbide of the biomass--, since the term "carbide" does not appear previously in the claims. Claim 1 has been further amended to recite that the metal oxide containing material comprises metal oxide and optionally, the metal thereof in reduced form, as supported in the specification at, for example, page 9, lines 6-9. Claim 2 has been further amended to recite that the metal oxide containing material comprises metal oxide, partially or entirely reduced to a reduced metal, as supported in the specification at page 16, lines 2-4.

New Claims 15-18 have been added. Claims 15 and 16 are supported at, for example, page 8, last two lines, of the specification. Claims 17 and 18 are supported in the specification at, for example, the paragraph bridging pages 13 and 14.

No new matter is believed to have been added by the above amendment. Claims 1-18 are now pending in the application.

REMARKS

The rejection of Claims 1-14 under 35 U.S.C. § 103 as unpatentable over U.S. 4,569,691 (Fichte et al), is respectfully traversed.

Fichte et al discloses a method of making ferroboron or ferroborosilicon alloys by carbothermic reduction of a burden or charge consisting of an oxidic boron carrier, a carbon carrier such as wood pieces, and iron oxide (and optionally granular silicon dioxide) in a low-shaft electrical furnace, wherein the iron oxide is reduced at temperatures theoretically as low as 720°C by carbon monoxide and carbon (column 2, lines 40-68).

Fichte et al does not disclose that their low-shaft electrical furnace is substantially isolated from oxygen. The Examiner finds, however, that Fichte et al's apparatus, as detailed in the Figure therein, employs a hood, shown at **25**, which the Examiner finds "would serve to close the furnace off from the outside atmosphere, while the process of [Fichte et al] does not add any additional oxygen. Since no oxygen is required by [Fichte et al], and [Fichte et al] closes the furnace through the use of a hood," the Examiner thus finds that excluding additional oxygen from the furnace of Fichte et al would have been a modification obvious to one of ordinary skill in the art.

In reply, Fichte et al discloses that their hood is connected to a suction blower **26** for evacuating water vapor, carbon monoxide and carbon dioxide which may be formed in the furnace (column 5, lines 22-25). The Figure in Fichte et al does not show a seal between the hood and the furnace; indeed, the Figure shows a gap between the bottom of the hood and the top of the furnace. Thus, there is **no** means in Fichte et al's apparatus to substantially isolate the furnace from oxygen. Indeed, it is only with the present disclosure as a guide that one of ordinary skill in the art would positively act to substantially exclude oxygen from Fichte et al's method.

Claims 4, 8 and 13 are separately patentable because Fichte et al does not disclose an agglomerating step at the point in which agglomerating is carried out in these claims. As previously argued, the feed material in all cases is defined as a material which has already been heated in the heating furnace to carbonize the biomass; it is **not** the material to be charged into the heating furnace. Fichte et al discloses agglomerating only their charge, i.e., their material prior to introducing the charge to the furnace.

Significantly, the Examiner has not responded to this argument, and it is respectfully submitted that no legitimate response is available.

For all the above reasons, it is respectfully requested that the rejection over Fichte et al be withdrawn.

The rejection of Claims 1-14 under 35 U.S.C. § 103(a) as unpatentable over DE 3546261 A (Greul), is respectfully traversed. According to the English Abstract thereof, Greul discloses a method of reducing ore by adding the fine grained ore to a thermoplastic biomass, mixing them together and forming brickets, prior to subjecting the mixture to an air, oxygen, water vapor, CO_2, or mixture of these gases and vaporizing at 800-900°C. The ash is then used to separate the reduced metal in a suitable form for transportation, storage or further working. Greul discloses further, according to the English Abstract, that at the same time a coking reaction takes place consisting of a Bertinuins reaction at 250°C and further pyrolytic heating at 700°C, that the Meile reaction starts at 280°C leading to a reduction process, and that these wood-coke-metal brickets can be fed directly without cooling to a metal melt or to a melting furnace. The Examiner relies on the disclosure in Greul of a CO_2 atmosphere as a non-oxygen atmosphere, and additionally finds that the reducing temperature of Greul include temperatures of 1250°C to 1450°C.

In reply, the fact that Greul may subject their mixture to CO_2 is not the same as a description that heating is carried out with the substantial isolation from oxygen. Indeed, since air and oxygen are alternative atmospheres, there is no motivation provided by Greul to take any steps to substantially isolate the mixture from oxygen. Nor is there is any description in Greul with regard to temperatures as high as 1250° to 1450°C. Greul discloses a melting furnace *per se*, not a separate heating furnace and reducing furnace. Thus, Claim 2 and claims dependent thereon are separately patentable. Nor does Greul disclose or suggest agglomerating other than during the formation of their original mixture, prior to subjecting to the gas supply and vaporization. Claims 4, 8 and 13 are separately patentable for this reason also.

For all the above reasons, it is respectfully requested that the rejection over Greul be withdrawn.

The objection to Claims 1-14 with regard to the term "carbonize the biomass in the mixture in a heating furnace substantially isolated from oxygen" is respectfully traversed. Indeed, the objection is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that this objection be withdrawn.

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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